

REMARKS

Applicant has considered the outstanding official action. It is respectfully submitted that the claims are directed to patentable subject matter as set forth below.

Elected claims 26-29 are withdrawn due to a species restriction. Claims 30-40 are withdrawn as being directed to non-elected subject matter.

The sole outstanding rejection is of claims 1-25 under 35 U.S.C. §103(a) over U.S. Patent No. 3,229,974 (Banks) in view of U.S. Patent No. 4,521,209 (DuFresne).

The Examiner acknowledges that Banks does not disclose a gaseous flow member associated with a gripping member. In relying on the vacuum ports as taught by DuFresne as a basis for rendering the claimed folding machine obvious, in combination with Banks, the Examiner states, at page 3 of the outstanding office action, that it would be obvious to modify Banks' folding machine by having a gaseous flow member as suggested by DuFresne "in order to grasp strong and genteelly to the web" while being folded (emphasis added). Applicants respectfully disagree. The claimed folding machine does not claim a gaseous flow member which "grasps" a web material. Rather, applicants claim a gaseous flow member which inserts a web material into at

least one gripping member which grasps the web material. Banks teaches solely mechanical insertion elements and mechanical grasping elements. DuFresne teaches holding a web material to interacting rolls by vacuum (i.e., suction) applied through ports present in the exterior surface of the rolls. Thus, the only teaching of a "gaseous flow member" in Banks and DuFresne is for holding or grasping a web material to a roll and not for insertion of a web material into a gripping member which grasps the web material. Accordingly, applicants submit that no suggestion is present to combine the elements as taught in Banks and DeFresne to obtain applicants' claimed folding machine. If one skilled in the art were motivated to combine the vacuum ports of DuFresne with the mechanical elements of Banks, the vacuum ports of DuFresne would replace the mechanical grippers of Banks since the vacuum ports are taught in DuFresne to hold a web material in place on a roll, which is also the purpose of the mechanical grippers of Banks. Thus, such combination would still utilize the mechanical tucker as taught by Banks for initial placement of the web material or no insertion element would be required based on the teaching of DuFresne since the web lies on the exterior surface of the roll and is not tucked or inserted into a recess in the roll. No suggestion is present to provide the claimed combination of

applicants of the elected sole independent claim 1, much less the specific structural combinations of the dependent claims.

More specifically, as to the teachings of Banks and DuFresne, the primary reference Banks describes a folding machine wherein folds are generated in a web by passing the web through a nip between two folding rolls 27, 28. Each folding roll is provided with a plurality of mechanical grippers. Each gripper is formed by a pair of jaws, i.e., a fixed jaw 33, 36 and movable jaw 34, 37 (see Figure 2), which operate in conjunction with a wedge or tucker 35, 38. The rolls are arranged such that in the nip therebetween one pair of a movable jaw and a fixed jaw of a roll co-acts with a corresponding tucker of the opposite roll (see column 4, lines 28-31).

As set forth at column 4, lines 42-59 and column 4, line 69 to column 5, line 2, Banks teaches that -

"As the rolls 27 and 28 continue their rotation from this point, the end of the tucker enters the space between the opposite jaws 33 and 34 or 36 and 37 and moves the web between the jaws. When the tucker point is in registry with the horizontal radius of its roll 27, 28, the tucker has reached its position of greatest

penetration between the opposite jaws, and the subsequent travel of the tucker result in withdrawal thereof from between the jaws. On further rotation of the rolls 27 and 28, the tucker point is withdrawn from between the opposite jaws, and complete withdrawal is reached when the tucker point has travelled so that it is on a radius of its roll extending downwardly at about an angle of six degrees from the horizontal radius. The opposite jaws at this point of travel of the rolls 27 and 28 are beginning to close on that part of the web that has been tucked between the jaws by the tucker, and the jaws continue their closing action as the rolls 27 and 28 rotate farther."

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"Pivotal closing movements of the movable jaws are thus effected by a relatively small travel distance, jaw pivoting beginning at about the time that a cooperating tucker and jaw pair are centered on the horizontal line extending between the axis of the rolls 27 and 28 and proceeding gradually so as to avoid any pinching of the webs against the faces of the tuckers, and

the movable jaws are not closed to grip the web against the fixed jaws until the tuckers are completely withdrawn."

Accordingly, the tuckers are used to introduce the web into the jaws and the jaws close to pinch the web after the tucker has been removed therefrom. Banks, therefore, teaches use of a mechanical member, i.e., the tucker, to crease the web along the folding line and push the web into the jaws so that the jaws can then hold the web in place.

DuFresne does not disclose the use of mechanical jaws or a mechanical inserter. Vacuum ports are used to hold a cut web portion to a series of rolls to provide single or double folding of the web portion based on the speed and position of the web on the rolls. As described at column 2, lines 64-67, since transverse roll 24 is rotating more slowly, i.e., at a slower surface speed, there is a slight accumulation of web material just rearward of the point of vacuum application by the vacuum port 34. Suction from the vacuum is therefore the only retention means and is described to retain the web on an exterior surface of a roll while the web is folded. Thus, DuFresne at most suggests to replace a mechanical gripping jaw with a vacuum retention member.

The claimed folding machine to the contrary includes a gaseous flow member to insert a web material into a gripping member and not to grasp or retain the web material during folding which is the function of the gripping member. Claim 1 clearly indicates that the gaseous flow member (e.g., suction) is used to insert the web material into the gripping member. The mechanical gripping member then retains the web material during folding. There is nothing in the applied art which teaches or suggests this claimed combination. Claim 1 has been amended to further clarify or emphasize this combination. The claimed folding machine is based on the novel and inventive concept of using a gaseous flow member, e.g., suction, to introduce a web into jaws or gripping members and to retain the web therein until the web is safely gripped by the gripping members. Thus, the gaseous flow member does not retain the web in relation to a roller as taught by the secondary reference DuFresne. Further, the claimed folding machine does not require the removal of a mechanical element as required in Banks. The invention serves to retain a web mechanically and safely. Losing control of the web by removing mechanical tuckers as taught in Banks from jaws before the jaws are closed is avoided, thus avoiding the risk of losing the web prior to its retention because the web is safely

retained by the gaseous flow member until the jaws are closed. Mechanical wear of the tucker and jaws and damages on the web due to friction between the tucker and jaws as in state of the art devices as discussed in the introductory section of the captioned application, is also avoided since the jaws need not pinch the web against a tucker.

Providing a gaseous flow member (e.g. suction) to introduce a web into a mechanical gripper and retention of the web by the mechanical gripper during folding as claimed by applicants is conceptually and structurally different from using a vacuum as the sole means of retaining a web to a roll as taught in DuFresne, or in replacement for mechanical jaws as taught by Banks. No other suggestion is provided in view of the specific teachings of Banks and DuFresne.

Accordingly, applicants respectfully submit that the applied references do not render the claimed folding machine obvious within the meaning of 35 U.S.C. §103. Thus, withdrawal of the rejection under 35 U.S.C. §103 is respectfully requested.

Reconsideration and allowance of the application are respectfully requested.

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Respectfully submitted,

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